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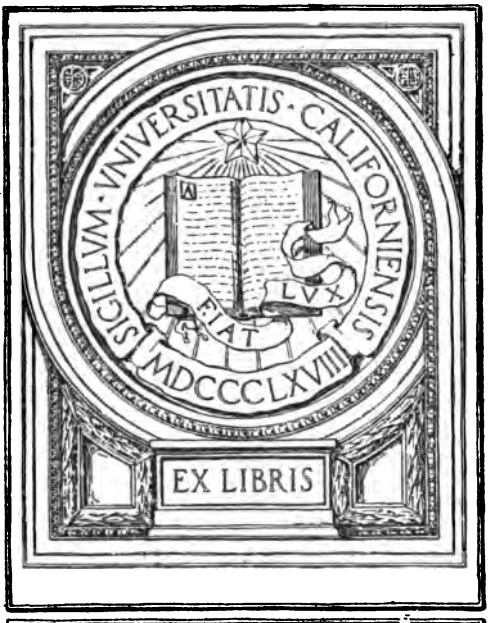
# MONEY

WILLIAM A. SCOTT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# MONEY

BY

William A. Scott, Ph.D., LL.D.

Director of the Course in Commerce and Professor of Political Economy in the University of Wisconsin

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Published November, 1913

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## EDITOR'S PREFACE

Many books have appeared from time to time on the subject of money, but most of them are large volumes filled with complicated discussion of theoretical points. This book aims to give a simple statement of money functions. In my opinion, the author has been unusually successful in getting the elements of the subject before the reader. In these days of loose talk about money and prices, Professor Scott's book should be of real value to the many. This book is to be followed by one on banking by the same author. F. L. M.

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## AUTHOR'S PREFACE

This book is designed for the general reader rather than the expert or the young student. Technical language, controversy, and nonessentials have, therefore, been avoided so far as possible. Readers who desire a more complete and extended treatment of the subject along the same lines are referred to the writer's textbook on *Money and Banking,* published by Henry Holt & Co., and to Professor J. Laurence Laughlin's book on *Money,* published by Chas. Scribner's Sons. For a different treatment of the subject, in some respects in conflict with the one here presented, the reader is referred to Joseph French Johnson's *Money and Currency,* published by Ginn and Company. These books will also introduce him to the literature of the subject in all its aspects.

WM. A. SCOTT.

*University of Wisconsin.*

## CONTENTS


PAGE

**Chapter I. The Standard of Value** . . . . 1

I. Meaning of the Term . . . . . 1
II. Individual and Community Standards 3
III. Essential Qualities of a Standard of Value . . . . . 5
IV. The Standard of Value and Prices . 7
V. Primary and Secondary Standards . 9
VI. The Importance of Stability of Value in the Standard . . . . . 11

**Chapter II. The Medium of Exchange** . . . 16

I. Meaning of the Term . . . . . 16
II. Services Rendered by the Medium of Exchange . . . . . 18
III. The Qualities Needed in a good Medium of Exchange . . . . . 20
IV. The Elements of the Medium of Exchange . . . . . 23
V. Gresham's Law . . . . . 27
VI. Subsidiary Coins and Paper Money . 30
VII. Standard Coins . . . . . 32

PAGE

**Chapter III. The Forms and Sources of Money** 37

I. Definitions of Money . . . . . 37
II. Money an Historical Product . . . 39
III. Coins and Their Manufacture . . . 40
IV. Inconvertible Notes . . . . . 46
V. Coin Certificates . . . . . 53
VI. Convertible Government Bonds . . 57

**Chapter IV. Commercial Banking and the Medium of Exchange** . . . . . 62

I. Checking Accounts and Banknotes . 62
II. Bank Currency and the Credit System 65
III. The Advantages of Bank Currency . 67
IV. Commercial Banks as Reservoirs and Distributing Centers for Money . 70

**Chapter V. The Value of Gold and Prices** . . 73

I. The Uses of Gold . . . . . 73
II. The Production and Durability of Gold 78
III. The Value of Gold . . . . . 80
IV. Bimetallism . . . . . 82
V. The Multiple Standard . . . . . 87

PAGE

VI. Means of Counteracting Fluctuations in the Value of Gold . . . . . 93

**Chapter VI. The Money of the United States** . 96

I. Origin of Our System of Coinage . . 96

II. The Silver Period . . . . . 99

III. The Gold Period . . . . . 101

IV. The Period of Inconvertible Notes . 103

V. The Free Silver Controversy and the Bland and Sherman Acts . . . . 107

VI. The Crisis of 1893 and the Act of 1900 110

VII. Present-Day Currency Problems . . 117

**References** . . . . . 123

# MONEY

## CHAPTER I

### The Standard of Value

THE money of a country includes a part, but not the whole, of its *medium of exchange*. An important element of that part of the medium of exchange, designated as money, is the commodity which constitutes what is called the *standard of value*. The discussion of our subject must, therefore, begin with an account of these two instrumentalities, of which we shall consider the standard of value first.

**1. Meaning of the term.** — Without going into the technicalities and abstractions involved in definitions of the terms, value and standard, and into the discussion of the appropriateness or inappropriateness of the phrase, standard of value, the actual character and functions of this instrumentality may be made clear by means

of a simple illustration. Imagine a community in which trade had been conducted by barter, and in which each trader had frequently bartered his surplus products for the surplus products of his neighbors. For example, suppose one man had traded wheat for wood, cattle, sheep, and plows on the following terms: 1 cord of wood for 5 bushels; 1 ox for 50 bushels; 1 sheep for 20 bushels; and 1 plow for 10 bushels. The figures 5, 10, 20, and 50 would accurately express the market values of these commodities, these figures referring in each case to bushels of wheat. The farmer whose surplus product had been sheep and who had traded them for these other commodities would accurately express their market values in terms of the results of his trading as follows: 1 cord of wood for ¼ of a sheep; 1 ox for 2½ sheep; 1 plow for ½ a sheep; and 1 bushel of wheat for 1/20 of a sheep. In like manner other traders could accurately express market values in terms of the commodity which he had bartered for the goods of others.

The term, standard of value, is the name which is commonly applied to the wheat and the sheep in the above illustration, and to any

other commodity when it is used as a means of expressing the terms on which commodities have been exchanged or traded or on which people are willing to exchange them, or on which people think they ought to be exchanged.

**2. Individual and community standards.** The wheat and the sheep in the above illustration were individual standards, since each was used only by the person who had bartered it frequently for other commodities. If a number of persons with individual standards established in this way should find it necessary to discuss market values, they would meet with difficulty, since each would use a language not intelligible to the others or only intelligible after a mathematical calculation. One, for example, would express market values in terms of bushels of wheat, another in terms of sheep, another in terms of cords of wood, etc., etc.

This difficulty could only be removed by the acquisition by each member of the trading community of the ability and the habit of quoting market values in terms of the same commodity. The ability thus to quote would exist in case each person had bartered his product for

some one commodity. In the community of traders assumed in the preceding section, for example, suppose each one had, among other trades, bartered his product for wheat. Knowing the terms on which his product exchanged for wheat, therefore, he could quote its market value in terms of that commodity, and if he did so quote it and everyone else did likewise, all the quotations would be comparable and perfectly intelligible to everybody.

Since the difficulty of discussing or communicating to others in any way market values expressed in individual standards would be experienced by every trader, search for a way out would be certain to be made, and this would speedily lead to the discovery of some one commodity for which each person had bartered and the habit of quoting in terms of that commodity would be established, and that commodity would become a community standard.

Such community standards were early established in every trading group of which history furnishes any record, and, as trade developed between different communities, standards common to wider and wider areas and to larger and larger groups appeared, until, with world-

wide trade, we have standards common to many nations. Indeed, at the present time all the nations in which commerce has been most highly developed use the same standard, gold, and only two standards, gold and silver, are used throughout the civilized world.

**3. Essential qualities of a standard of value.** — Since no commodity could become the standard of value of a community unless every other commodity in use in that community had been frequently exchanged for it, it is obvious that high and universal esteem for purposes of consumption is an essential quality of a community standard. It is impossible to imagine all the people of a neighborhood or district or nation trading their goods for a commodity which was not useful to them, or which they did not desire as a means of satisfying some want or wants. On the other hand, a commodity which everyone desires and which satisfies wants which everyone feels, would be purchased by everyone by the only means available in a primitive community, namely, barter. By virtue of such trading everyone would know the terms on which his goods ex-

changed for it, and on account of the difficulties of giving intelligent expression to the market values of goods mentioned above, this knowledge would make such a commodity the community standard, unless some other commodity equally or better fitted for such service were available.

While high and universal esteem for purposes of consumption is the only quality absolutely essential to a standard of value, others are highly desirable, and among several commodities which alike possess this essential characteristic determine which one will be used. Among these other qualities are high value in proportion to bulk, divisibility, durability, and fitness for coinage. These qualities are desirable, because, as will be explained in the next chapter, the standard of value serves also as an important element of the medium of exchange; and, as will also be explained in the next chapter, these qualities are essential to a good medium of exchange. Another important quality is steadiness or stability of value, the significance of which will be pointed out in a subsequent section of this chapter.

Of all available commodities gold and silver

possess this entire group of qualities in the highest degree of perfection, and of these two gold is superior on account of the fact that a given weight or quantity of it possesses much higher value than the same weight or quantity of silver. It is probably also superior in respect to steadiness and stability of value, but regarding this point there are differences of opinion.

**4. The standard of value and prices.** — *The numerical expression of the ratios in which goods exchange for the standard of value is called prices.* For example, in the United States at the present time, when one bushel of wheat is exchanging or would exchange on our markets for 25.8 grains of standard gold, we say that the price of wheat is a dollar a bushel, because gold is our standard of value and to 25.8 grains of it, mixed with certain substances called alloy in the proportion of 9 parts pure metal to 1 part alloy, we have given the name, dollar. In England when a commodity sells for 123.274 grains of standard gold, they say that its price is one pound sterling, because gold is the English standard of value and

123.274 grains of it, mixed with alloy, has been named a pound sterling.

The term *unit of value*, is commonly used to denote that amount of the standard, in the above illustration the 25.8 grains and the 123.274 grains, which has been designated by law and especially named to serve as the numerical unit in expressions of ratios of exchange. Certain units of weight were originally employed to fulfill this purpose, but their employment became confusing and consequently unsatisfactory when changes in these original units were made. For example, the original unit of value in England was a pound weight of silver. Subsequently, through debasement of the coinage and other means, much less than a pound weight of silver was used as a unit, but the name pound still clung to the smaller quantity. Hence, pound as a term used in weighing meant one thing and as the name of the unit of value a very different thing. Later still the standard of value was changed from silver to gold, but the word pound was retained as the name of the amount of gold adopted as the unit. In France the history of the unit of value is similar to that of England,

except that at the time of the revolution its name was changed from livre, the French word for pound, to franc.

Since prices are simply the expression of the ratios in which the commodity adopted as the standard of value exchanges on the markets for other commodities, the causes of price fluctuations may be grouped under two heads, namely, those affecting the value of the standard commodity and those affecting the value of the commodity the price of which is under consideration, value in this connection meaning that quality of a commodity which is changed in magnitude by changes in the relations between its demand and supply. The price of wheat, for example, will change when the relation between its demand and supply changes, or when the relation between the demand and supply of gold changes, unless the change in the value of the one commodity exactly offsets that in the value of the other.

**5. Primary and secondary standards.**— The phrase standard of value, as used in the preceding sections, should be qualified by the adjective *primary,* in order to distinguish it

from standards occasionally used which may be described as *secondary*. In this country a secondary standard was in use from 1862 to 1879. In the former year the United States Government, in order to assist in paying the expenses incident to the war then in progress, issued its notes promising payment to bearer in denominations suitable for circulation as money and make them legal tender in payments between individuals, i. e., decreed by law that the tender of these notes in the payment of financial obligations would constitute discharge of such obligations.

For reasons which will be explained in a subsequent chapter these notes depreciated. That is to say, the people of this country, and of other countries as well, did not consider them worth, and would not give for them on the open market, the amounts the payment of which was promised on their faces. As a result of this depreciation these notes took the place of coin in the circulating medium of the country, because people could melt down the coins and exchange the bullion for these notes at their depreciated value and with them meet a much greater volume of financial obligations

than they could have met by tendering the coins directly. When everybody thus came to tender depreciated notes in the payment of all their obligations, prices were universally quoted in these notes instead of in gold, and they thus became the standard of value of the country.

The dependence of prices upon the value of gold was not, however, thereby in any way broken. What the Government promised to pay in these notes was dollars, and dollars meant a certain amount of gold carefully specified in laws enacted by Congress. The value of the notes themselves, i. e., what people were willing to pay for them on the open market, was daily quoted in terms of the gold standard. The notes, therefore, were a *secondary* standard only, gold continuing to serve as the *primary* standard. Under these conditions prices fluctuated, not only because of changes in the relative value of gold and of commodities, but also because of changes in the degree of depreciation of these notes.

**6. The importance of stability of value in the standard.** — Price quotations are one of the most important, probably the most impor-

tant, of the indices we possess of changes in commercial, industrial, and social conditions. Farmers, manufacturers, and merchants constantly use them, and must use them, as the basis of the calculations by which they regulate their affairs. If the price of wheat or pork or beef, for example, is advancing, the farmer is apt to conclude that changes in the relation between the demand and the supply of these commodities is taking place of such a character as to justify him in increasing his output. The manufacturer is apt to draw the same conclusion when the prices of the products of his factory advance. Under the same conditions the merchant will probably increase his stock. Rising prices also mean an increase in the cost of living and affect the well-being of all classes whose incomes do not increase in the same proportion. From falling prices conclusions of an opposite character are drawn and their effect upon the cost of living is the reverse of those just indicated.

It is of great importance to individuals and to society that conclusions based on price statistics be correct. If they are not, disastrous consequences follow. If a farmer increases his

acreage of a given crop because from price quotations he has drawn the conclusion that more of it is wanted by the community, and it turns out that he was mistaken, financial loss, and possibly financial ruin, is sure to follow. If mistakes of this kind are made by large numbers of people, business depression is certain and a commercial crisis possible. Incorrect conclusions drawn from falling prices may be equally disastrous. Conclusions from price statistics concerning changes in the relation between the demand and the supply of commodities currently produced for the markets can only be beyond question on the score of accuracy, however, when the relation between the demand and the supply of the standard remains unchanged, i. e., when the value of the standard is stable. When the value of the standard as well as that of commodities is changing, price quotations are a composite of such complexity that their correct interpretation by the average man is impossible, and only approximately attainable by the most skillful experts. Mistakes in interpretation are sure to follow under such conditions, with the disastrous consequences above mentioned and to the

confusion of students of social conditions.

Stability of value in the standard is also greatly to be desired, because the standard of value is also the standard of deferred payments. In this country practically all notes and mortgages and bonds and other contracts requiring that payments be made in the future call for the payment of a specified number of dollars, and in other countries of a specified number of their units of value. It is obvious that, if, as a result of modifications in the relations between its demand and supply, the value of the standard changes in the interval between the making of a contract of payment and its execution, the debtor will pay the creditor either more or less than the actual amount of value which would have met the conditions of the contract at the time it was drawn. If more, the debtor suffers injury, if less, the creditor. Exact justice between them is only possible if the value of the standard remains stable throughout the period covered by the contract.

When one contemplates the enormous magnitude of the amounts involved in outstanding contracts calling for future payments in the United States or in any other great commer-

cial nation, he appreciates the vast influence of changes in the value of the standard on the distribution of wealth, and the magnitude of the injustice caused by such changes. The attainment of stability of value in the standard would, thus, eliminate one of the chief causes of social and economic injustice, and should, therefore, be given high rank among the objects of human endeavor.

## CHAPTER II

### The Medium of Exchange

**1. Meaning of the term.** — The phrase, medium of exchange, accurately describes the instrumentality we now wish to consider. A medium is an intermediary or go-between. Language, for example, is a medium or intermediary for the conveying of ideas from one person to another. A merchant is a medium or intermediary for the conveyance of goods from the producer to the consumer. A medium of exchange is an intermediary or go-between in the process of exchanging goods or services.

Nowadays we rarely exchange goods or services directly. A farmer comes to market with a load of grain and wants an overcoat. He does not search for a clothier who not only has for sale the overcoat he wants, but also wants the grain he has. It would probably be impossible to find such a person, and if he did, it would be the merest chance if the clothier

would want the amount of grain they might agree to be the value-equivalent of the overcoat. Instead the farmer exchanges his grain for something which he knows everybody will accept for anything he has for sale and which is capable of being divided and subdivided and accumulated so as to be the equivalent of any amount of value, and this he exchanges for the overcoat, in whatever quantity is necessary. This something is called the medium of exchange, and it is properly so called because it mediated or served as an intermediary in the exchange of the grain for the overcoat.

In the transaction just cited the amount of time involved was small, a few hours at the most. In many exchanges, however, days, months, and even years are involved. This is the case when a person sells his product one day and with the proceeds buys another product, days, months, or even years later. He may even never make the exchange himself, but transfer the right so to do to other persons, by gift during his own life time or by will or through the laws of inheritance to those who succeed him in life. Saving is but a name for deferred expenditure. However long the ex-

penditure may be deferred, however, and by whomsoever it may ultimately be made, the complete transaction is an exchange of goods or services against goods or services and the instrumentality through which the exchange is effected is the medium of exchange.

**2. Services rendered by the medium of exchange.** — Some of the difficulties involved in exchanging goods or services directly for each other are illustrated by the case of the farmer above described. It is not easy to find two persons each of whom has the thing which the other wants and wants the thing which the other has, and is willing to take the precise amount of the thing desired which the terms of the exchange agreed upon would bring him. There would be very little commerce if these difficulties could not be overcome, and in overcoming them the medium of exchange has rendered a service essential to the progress of civilization.

It has rendered a second important service in making possible saving on a large scale. Without a medium of exchange saving would needs take the form of hoarding surplus prod-

ucts. The farmer would have to store his surplus grain and allow his herds to grow until the time should come for consuming his savings; the manufacturer could save only by piling up in his warehouses the products of his factory; and the merchant would have had to buy and keep certain goods to be sold at the time he might wish to use his savings. The person who lives by selling his personal services would also have to buy and hoard certain goods in the hope that he could exchange them for what he might want at a later period.

In all these cases, however, the risk that the product hoarded would keep during the savings period, that it could be sold at the end of that period, and that the terms of the sale would be such as to render the sacrifice of saving worth while, would have to be assumed. In the vast majority of cases, these risks would be so great as to more than offset the inducement to save. The losses experienced by people who had attempted saving under these conditions would discourage others, and it is safe to say that few would ever make the attempt. A proper medium of exchange removes all these risks and thus renders saving possible and attractive.

A medium of exchange also promotes borrowing and lending. Without it a person with an unused surplus could aid another with a deficit only by transferring his surplus to him, but unless this happened to be in the precise form needed, which would rarely be the case, it would do the borrower little or no good. On the other hand, with a proper medium of exchange the lender can transfer to the borrower the means of purchasing at any time anything the market supplies, thus enabling him either to satisfy his own immediate wants or to purchase the means of producing wealth.

**3. The qualities needed in a good medium of exchange.** — In order that exchanges may be accurately, conveniently, and safely made under all conditions, that is, when the commodities to be exchanged differ widely in quality and value or when they differ very little, when the exchange is to be completed without delay or after a delay of days, weeks, months, or years, when the persons between whom the exchange is to be made are face to face or separated widely in space or time, etc., etc., the medium of exchange must represent

every conceivable combination or amount of value, must be easily, cheaply, and safely transportable from place to place, must be easily recognizable, durable, and certain in value, and must be acceptable to all the parties involved in the trade, and must be automatically adjustable in volume to the fluctuating needs of commerce.

In the United States at the present time our medium of exchange must render it possible to make trades in values as low as one cent and as high as millions of dollars and in every possible combination of amounts between those figures. It must be possible also to make up these amounts in a very short space of time, without long and difficult calculations and without danger of loss. Our medium of exchange would be imperfect and quite incapable of meeting our needs if it did not measure up to this requirement.

Since commerce takes place between people living far apart, in different cities, states, and even nations, the medium of exchange must be of such a character that it can be sent through the mails and by express, over the railroads and on steamships, and be carried

about in bags, pockets, and purses, and it must be possible without danger of loss to transport in these ways all amounts large and small.

The importance of being easily recognized is well illustrated in a busy station where change must be made with great rapidity and where difficulty of distinguishing one element of the medium of exchange from another would render impossible the transaction of the necessary business.

Without elements of great durability a good medium of exchange would be impossible, because the wear and tear necessarily involved is great, and as an instrument of saving it frequently needs to be kept for long periods of time. Certainty of value is also absolutely essential. If there is any uncertainty regarding the value of any element of the medium of exchange, people will either refuse to accept it, in which case it will cease to be a medium, or they will protect themselves against possible loss by charging a higher price for the goods or services exchanged. In either case commerce is obstructed or made impossible.

In order that people may be willing to part with their commodities in return for the me-

dium of exchange, they must be assured that it in turn will serve them in making desired purchases — that is, that the persons who have the goods they want will be willing to accept it in exchange for such goods. This requirement implies the possession of practically universal acceptability in some of the elements of the medium, of acceptability among wide circles in all of them, and of interchangeability between all, such interchangeability enabling the holder of any element which does not possess universal acceptability to exchange it for one which does.

The volume of exchanges in any community varies from time to time. In this and most other countries it varies with the seasons, being greatest in the spring and fall and least in midsummer and midwinter. The medium of exchange should adjust itself to these changes, increasing automatically in volume as the volume of exchanges increases, and decreasing automatically under the opposite conditions.

**4. The elements of the medium of exchange.** — The qualifications required in a good medium of exchange account for the

composition of the currencies of modern nations and for the changes which have taken place in the past and which are still in progress. Every such currency consists of elements which from different points of view may be classified as follows: (1) hand-to-hand money, written or printed orders of one party to pay specified sums to another, and book accounts; (2) coin, government notes, and bank currency, the latter sub-classified into bank notes and checking accounts; and (3) standard money and credit currency.

By hand-to-hand money is meant those elements of the medium of exchange which perform their service by mere transfer from hand to hand without endorsement or any other formality. In the United States at the present time it includes all our coins, several varieties of governmental notes, and bank notes. Under the head of written or printed orders to pay specified sums to specified persons belong bank checks and drafts, postal money orders, express money orders, and other similar devices. Some of these can be transferred between other than the original parties by the formality of endorsement. Book accounts are widely used and

constitute much the most important element of the medium of exchange of modern nations. Any book account serves as a medium of exchange if directly or indirectly it enables purchases and sales of commodities to be balanced against each other, for example that of a grocer who credits farmers with the proceeds of eggs, butter, vegetables, and other produce purchased, and debits them with their purchases from him, or that of the farmer himself who credits his hired man with the wages agreed to be paid for his services, and debits him with house rent, milk, butter, eggs, potatoes, wood, and other produce advanced him. Indirectly the checking accounts of commercial banks balance against each other on a large scale the purchases and sales of individuals, communities, and nations, and thus constitute the largest element of the medium of exchange of all highly developed commercial nations.

The second of the above classifications is based in part upon the form and in part upon the source of the medium of exchange. The metallic element of the medium usually takes the form of coins, though bullion is also used. Government notes are those issued by the Gov-

ernment and for the payment of which it is responsible, while bank currency originates with banks, which are responsible for meeting the obligations involved in its issue. The name *paper money* is frequently applied to government and bank notes to distinguish them from coins. Coins may be sub-classified on the basis of the metals employed in their manufacture into gold, silver, nickel or amalgam, and copper, and on the basis of their relation to each other, into standard and subsidiary.

The basis of the third classification is the presence or absence of the element of credit. Standard coins, that is those made from the standard of value, are the only ones in which this element is entirely absent. All other coins, all paper elements of the currency, and all book accounts which serve as a medium of exchange, contain the element of credit in some degree. Our silver coins, for example, are actually worth as bullion much less than the amount stamped upon them and government and bank notes are in and of themselves worth practically nothing. People take them at the value indicated by the stamp upon them only because somebody in whom they have confidence is

under obligation to make that value good, the government in some cases, banks in others, specified persons or corporations in others. The term *credit currency* is appropriately applied to all elements of the medium of exchange which circulate at a value greater than the market value of the substance of which they are made because the credit of some government or bank or person or corporation is an essential factor in such circulation.

**5. Gresham's law.** — The maintenance of a medium of exchange consisting of coins made of different substances, and of paper elements issuing from different sources, is only possible when complete elimination has been made of the interest of anybody and everybody to discriminate in favor of one element and against others. If such discrimination is for any reason profitable, those elements which alone can with profit be used as a medium of exchange will soon be the only ones so used. The others will be devoted to other uses which are more profitable and on this account will disappear from circulation. This fact was observed in the seventeenth century by Sir Thomas

Gresham, Director of the English mint, and stated in the form of a law which has since borne his name. *Bad money, he said, drives good money out of circulation.*

This law has been brought into operation many times by the circulation in large quantities of worn and clipped coins. When the proportion of such coins becomes large, full weight coins will either be melted down and sold as bullion or clipped and sweated. It was cases of this kind which Sir Thomas Gresham had in mind when he used the adjectives *good* and *bad* in the statement of his law, *bad money* referring to worn and clipped coins and *good money* to full weight coins.

The operation of this law has also been frequently illustrated by the substitution of silver for gold coins and vice versa. In the early part of our history five silver dollars contained fifteen times as many grains of silver as did a five-dollar gold piece grains of gold, fifteen to one in 1793, at the time these coins were first minted, being about the relative values of the same weight of silver and gold. Subsequently the value of silver relatively to gold fell so that it required nearly sixteen ounces of silver

to sell upon the markets for as much as an ounce of gold. The result was that gold coins completely disappeared from circulation, because they were worth more as bullion than as coin. For the opposite reason, silver remained in circulation and silver bullion was taken to the mint and coined. Later still in our history, on account of a great fall in the value of gold relative to silver, gold coins took the place of silver, the latter being melted down or exported and sold as bullion.

The disappearance of coin as the result of the circulation of depreciated notes is another form in which the truth of Gresham's law has been frequently demonstrated. During the war between our northern and southern states, both the Federal and the Confederate governments paid a portion of their bills in their own notes payable to bearer, made legal tender and issued in denominations suitable for circulation as money. They very soon depreciated, and became a secondary standard of value as explained in Sec. 5 of the preceding chapter, and coin of all kinds disappeared from circulation, since on the bullion market they could be sold for these notes at a good premium, and a five-

dollar note would pay as many debts or buy as many things as five silver dollars or a five-dollar gold piece.

The terms in which Sir Thomas Gresham stated his law may be objectionable because the phrases *bad money* and *good money* are not accurate descriptions of the forces which crowd some of the elements of the medium of exchange out of circulation and hold others in, but the law itself is as certain in its operation as those of the Medes and Persians. It is really only one form of the expression of a law of much broader application, namely that all men are prone to make the most of their possessions.

**6. Subsidiary coins and paper money.**— In order to prevent the operation of Gresham's law every time a change takes place in the relative values of the precious metals, the device of making certain coins *subsidiary* to others which are called *standard* has been adopted. In order to accomplish this the following method of treating the coins called subsidiary is employed:

(a) The amount of metal put into them is considerably less than the amount of value in-

dicated by the stamps to be put upon them would purchase on the market;

(b) They are coined on government account only and in quantities sufficient to supply the actual need of the public for money of those denominations;

(c) They are made legal tender in small amounts only; and

(d) They are made redeemable in standard coins at the amounts stamped upon them.

The first of these regulations leaves room for a considerable increase in the market value of the metal of which the coins are made without incurring the risk of their disappearance from circulation, and the fourth insures their circulation at the value represented by the stamp upon them in spite of the fact that they are not worth that amount as bullion. The second protects the government which assumes the obligation to redeem them at the values indicated by the stamps on them, and the third prevents a debtor from overburdening his creditor with them.

In order to maintain in circulation side by side both coin and paper notes, the latter must be subjected to substantially the same

treatment as subsidiary coins — that is, they must be redeemable in standard coin at the value indicated by the stamp upon them and must be limited in quantity to the actual need for them. Limitation of the amount for which they are legal tender is not essential but is not uncommon.

7. **Standard coins.** — The reasons for the use of the standard of value as an element of the medium of exchange is revealed in the preceding section. In order that they may circulate side by side without bringing Gresham's law into operation, the elements of the medium of exchange must be redeemable in the amounts of value indicated by the stamps they bear, regardless of the value of the metal they contain. Since these stamps merely refer to definite amounts of the standard of value, the only convenient redemption material is the standard of value itself put up in coins of convenient size and weight.

In order to assist in the comprehension of this fact let us note the difficulty that would be involved in the use of any other substance as material for redemption. Suppose we at-

tempted to use silver. A five-dollar government note or a five-dollar bank note promises to pay to bearer five dollars, which means five times 25.8 grains of standard gold. The equivalent of that in silver would be an amount varying with the market price of that metal. If the redemption in silver of a five-dollar note was desired, therefore, it would be necessary to note the market price of silver at the date of redemption and to weigh out such a quantity as would be the precise equivalent in value of 129 ($5 \times 25.8$) grains of standard gold. The use of the scales in each case could not be avoided because from no combination of silver coins could one always make up the proper number of grains.

This difficulty is analogous to that which a grocer, desirous of saving the time of his clerks, would experience in putting up tea in pound and half-pound packages *if the pound weight was daily changing.* His labor would obviously be wasted because the pound packages of one day would not be pound packages the next, and to determine their weight exactly in terms of the new weight unit he would be obliged to reweigh each package.

In this connection it is well again to note the fact that a unit of value — our dollar, the English pound sterling, the French franc, the German mark — is merely a specified number of grains of the standard of value, but that the *market value* of any specified number of grains of gold or of any other substance is constantly changing in accordance with fluctuations in the relation between demand and supply, and that the only equivalence that can be established between commodities on the market is one of exchange value. If an attempt be made to substitute anything for the standard of value as redemption material, therefore, the quantity of it that will be needed to redeem any note or any subsidiary coin will change in exact accordance with the changes in its ratio of exchange to the standard commodity.

The fact that the standard of value must serve as redemption material for the various elements of the medium of exchange makes it desirable that it should be adapted to the art of coinage and that it should be itself an element of the medium of exchange. It should be adapted to the art of coinage because convenience and requisite speed in redemption

demand that the redemption material be put up in packages of convenient size and weight and legibly stamped. Standard coins are such packages and nothing else. They serve the same useful purpose the packages of tea in the illustration above used would have served. They save the use of scales in each transaction. It is desirable that standard coins be an element of the medium of exchange because that ensures their wide dispersion and their consequent presence wherever redemption is likely to be required.

It should be carefully noted that the desirability and indeed practical necessity of using the standard of value as an element of the medium of exchange does not establish identity of functions between these two instrumentalities, nor in any way justify their being considered as one and the same thing. In its use as an element of the medium of exchange the standard of value performs a service *in addition to and different from* that of measuring and expressing ratios of exchange, a service which is rendered by other elements of the medium of exchange which are quite incapable of service, or at least do not serve at the same

time, as standards of value. The distinction between these two instrumentalities is quite as marked and as real as that between a horse and steam. It happens that both horses and steam at times perform the same service, namely that of propelling cars on a track, but for that reason they are not identical and we would not be justified in considering them as one and the same thing.

## CHAPTER III

### The Forms and Sources of Money

**1. Definitions of money.** — There is no consensus of opinion among economists regarding the precise meaning that should be given to the word money. All are agreed that it should be made to comprehend some of the elements of the medium of exchange, but no one apparently believes that it should comprehend them all. Regarding which ones should be included and which excluded there is wide difference of opinion. Popular usage, however, seems to be fairly consistent in including all those elements of the medium of exchange which pass freely from hand to hand by the mere act of transfer and without endorsement and which are accepted without question by everybody. In the United States in the ordinary use of the term everyone includes all our coins, the United States notes or greenbacks, silver and gold certificates, Sherman notes, and bank notes, and no one includes bank checks

and drafts, post office money orders, express money orders, travelers' checks, and the like.

The reasons assigned by the makers of the different definitions depend upon the use they desire to make of the term rather than upon the meaning which usage has assigned it. Some desire to emphasize the importance of the legal tender quality and therefore include only such elements as have been declared by law to be legal tender in the payment of debts —that is, such as the law declares shall constitute a legal discharge of the debt when they are offered in payment. Others would emphasize the importance of the fact that only the coins made from the standard of value actually possess in their own substance the amount of value they are used to transfer, and would therefore include only gold coins under the head of money.

It is questionable, however, whether these or any of the other reasons given for departing from popular usage are adequate. It is necessary to distinguish carefully between the standard of value and the medium of exchange and between the various elements of the latter, but no important scientific end has been served

by any of the definitions which have been made. It seems best, therefore, to abandon the use of the term for scientific purposes and to use it in the popular sense as occasion may demand. For the purposes of this chapter we shall use it merely as a convenient means of grouping certain of the elements of the medium of exchange to which we desire to give special consideration.

**2. Money an historical product.** — The money of any country is a product of its history and can only be explained by reference to that history. There is no combination of elements which is absolutely necessary and there are no absolutely necessary ways in which these elements must come into existence. Coins, for example, may be and have been made of a great variety of metals, and they have been of various sizes and shapes and stamped and ornamented in various ways. They may be manufactured by private persons or by governments, and, if by governments, for private parties who supply the metal or on government account only. Paper money may be issued and has been issued by governments, industrial

corporations, banks, and private persons. It may be issued under strict regulation or without any regulation.

The experience of centuries and a vast amount of experimentation in many countries and under various conditions has shown that certain forms of money are better than others and that some methods of manufacturing money are desirable and others undesirable. In this chapter we shall record the results of some of this experience and in a later one we shall explain precisely how the United States came to have the forms of money now in circulation as well as the other elements of the medium of exchange now in use, and indicate to what extent they constitute a perfect currency and in what respects they fall short of perfection.

**3. Coins and their manufacture.** — All commercial nations now use gold, silver, and copper coins, and others made of nickel or of an amalgam of some kind. Gold is used in the manufacture of those of the highest denominations, silver of those the next in order of magnitude, nickel or amalgam of the next lowest, and copper of the lowest.

These practices have for the most part been independently adopted by each nation without collusion or conference with the others. They have been chiefly dictated by the convenience of the commercial world. For small change and for purchases of relatively small size, coin is more convenient than any form of paper currency. Because of its relatively high value, gold is a fit substance for use in the manufacture of coins of the denominations 2½, 5, and 10 dollars, but is not well adapted to circulation in higher or lower denominations. Silver makes dollars, half dollars, quarter dollars, and dimes of convenient size and weight, but neither larger nor smaller coins, hence the use of the cheaper metals, nickel and copper, for our five and one-cent pieces. For coins of corresponding denominations other nations use precisely these same metals for precisely the same reasons. Experiments have repeatedly been made with other metals, but these have proven their superiority in every case and for this reason have come to be exclusively used.

The superiority of these metals for use in the manufacture of coins is due to their durability, homogeneity, and to their capacity to

receive and retain a legible stamp. Mixed with alloy, they can be made sufficiently hard to endure the wear and tear of constant use without great loss of substance, and their power of resistance to atmospheric elements of a chemical character which prove very destructive to most other metals, is very great. They can be easily divided and subdivided, and one portion is so nearly identical in character to every other that coins of the same weight and size made from any one of them do not differ from each other in any essential particular. A stamp on gold, silver, nickel, and copper can be easily read and is not readily obliterated when the amount of alloy needed for coinage is added.

Nowadays coin is manufactured by governments exclusively or under their auspices. The reason for this practice is not, as has been sometimes supposed, some value- or money-creating power possessed by a government stamp, but the importance of absolute truthfulness in the stamp. Unless the coins actually contain the precise amount of metal of the exact degree of fineness that the stamp on them testifies that they possess, the public soon loses confidence in them and refuses to take

them until their true content has been revealed by a test — that is, they become useless as a medium of exchange.

It is possible to supervise private mints in so thorough a manner as to remove all danger of dishonest practices, but after long experience and much experimentation with such mints, governments have taken the manufacture of coin into their own hands, and there does not seem to be manifest anywhere in the world any disposition to abandon this practice.

Though coins are, as a rule, manufactured at public mints, some of them, ordinarily those made from the standard of value, are produced in any quantity for private parties who deliver to the mints bullion of the legal standard. *Free coinage* is the phrase commonly used to describe this practice. It should be noted, however, that the use of this term does not imply the performance of the service of coinage *free of charge*. It simply means unlimited coinage as far as quantity is concerned. A charge for coinage is sometimes made in the form of the retention of a small percentage of the metal received, to which charge the name *seigniorage* is applied. This term is an inheritance from

the days of absolutism in government, when kings claimed coinage as a sovereign right and used it as a means of profit, seigniorage being the name applied to gains from this source.

Seigniorage is also commonly used to designate gains made from coinage on government account only. In the records and reports issued by our government, for example, the profits arising from the manufacture of subsidiary coins and from silver dollars are described by this name. In these cases public officials have purchased the metal on the open market at current prices and have manufactured the coins in the quantities and according to the regulations prescribed by law. Profits have arisen from the fact that the cost of the metal was much below that at which the coins were designated to circulate and at which they were actually issued by the government to its creditors.

As indicated in the preceding chapter, the maintenance in circulation of coins made of different substances has been made possible by making silver, nickel, amalgam, and copper coins subsidiary to those composed of the standard commodity. At various periods in

the history of this and other countries an exception to this practice has been made in the case of one or more coins, in this country of the silver dollar, in France and the countries of the so-called Latin Union, of the silver five-franc piece. To these coins the same treatment has been accorded as to the standard coins — that is, they have been freely minted for private parties and they have been made legal tender for any amount. To this practice the name *bimetallism* has been given to distinguish it from the other practice, which is called monometallism. In a subsequent chapter we shall discuss the relative merits of these practices and the controversy which has been carried on concerning them.

At the present time the dollar of the United States, the five-franc pieces of the Latin Union, and the thaler of the German Empire do not completely conform to the requirements of either the bimetallic or the monometallic systems. Not being freely coined — indeed, at the present time, not being coined at all — they fall short of bimetallic requirements, and, since provision for their redemption in standard coin has not been made, and since they are legal

tender in any amount, they lack two of the characteristics of subsidiary coin. Since the moral obligation to redeem them is generally recognized, however, and clearly implied in law in the case at least of the dollar of the United States, they so closely approach subsidiary coin in their actual operations as to justify the classification of the countries using them as monometallic.

**4. Inconvertible notes.** — At one time or another in their history most nations have had experience with notes not redeemable on demand in standard coin, but issued in denominations convenient for use as money and made legal tender and representing an obligation of the state or of some institution, usually a bank, to pay the sums indicated. Such notes were issued in this country by several of our states during colonial times, by the Revolutionary Government during the war with England and by the Federal Government and the Government of the Confederacy during the war between the states. Russia, Austria-Hungary, Italy, Spain, Greece, and South American states have repeatedly issued such notes. Dur-

ing the Napoleonic Wars the notes of the Bank of England were of this character, and those of the Bank of France have for short periods been inconvertible on more than one occasion.

All such notes circulate at a discount varying greatly from time to time, a quality which completely unfits them for service as a medium of exchange. They depreciate because they express an obligation to pay at some future time definite amounts of the standard of value, every essential feature of which obligation is left in uncertainty, and because they do not bear interest. Each note is simply a definitely expressed or implied promise to pay to bearer a certain number of the units of value of the country in which they are issued. The time at which this obligation will be met is uncertain, and usually the ability to pay of the state or institution which has assumed the obligation is open to question.

Such notes have usually been issued in times of financial stress, when the issuing state or bank could not meet its obligations in the ordinary way or could do so only at a great sacrifice, and when the financial outlook was so uncertain that nothing definite could be prom-

ised. In such a case there is and can be no absolute guarantee that the obligation will be met. Distrust is, therefore, a necessary accompaniment of the circulation of the notes, and, since their acceptance is forced by a legal tender law, this distrust takes the form of depreciation.

If a government should attempt to issue such notes at a time when it is perfectly able to meet its obligations in a normal way, the suspicion could not be avoided that by this means it is attempting to avoid its just obligations and distrust, resulting in the depreciation of the notes, would be certain to follow.

Even if the ultimate payment of such notes could be made as certain as anything in the future can be, the fact that the payment is to be made in the future and that the notes do not bear interest would result in their depreciation. A certain number of grains of gold or silver, or some other valuable substance of which possession can be obtained only *in the future,* is not the equivalent of the same amount of the same substance at present in hand. This fact accounts for the payment of interest which simply represents the difference in market

value between a thing now in hand and the right to that same thing in the future. When, therefore, a credit instrument guaranteeing the right to receive a thing in the future is offered on the market in exchange for that same thing, it will only command a smaller quantity of it—that is, it will depreciate.

It is precisely this which happens when an inconvertible legal tender note is circulated. People are forced to trade present values for future, and in the absence of any interest payment, their only method of remuneration is the exaction of a premium which takes the form of discounting.

The amount of discount exacted will be greater than the current rate of interest would warrant on account of the element of risk, which may be very large, and it will vary greatly from time to time because of variations both in the rate of interest and in the public estimation of the magnitude of the risk.

The outcome of the depreciation of inconvertible notes is frequent, erratic, and often wide fluctuations in prices, and the consequent encouragement of speculation of the most dangerous kind. On account of the operation of

Gresham's law, the forced circulation of such notes drives out of circulation all other forms of money, and they become a secondary standard of value, prices fluctuating in accordance with every variation in the degree of their depreciation as well as with changes in the value of the primary standard and in that of other commodities. Fluctuating prices always encourage speculation, but fluctuations from this cause discourage legitimate business as well, because it renders impossible accurate calculations of future costs and income. They thus force speculation upon everyone and gradually undermine and wear away those qualities of character and conduct upon which alone stable and prosperous industry and commerce can be based.

Every instance of the prolonged use of such notes recorded by history illustrates the defects which have been mentioned. Those issued by the Federal Government during the war between our states, for example, depreciated at one time to less than fifty cents on a dollar. While the war was in progress their depreciation followed the fortunes of the northern armies, becoming great in times of defeat and smaller in

times of success. After the war it changed with the prospects of the resumption of specie payments, and, after specie payments were assured by the passage of the so-called resumption act in 1875, it gradually decreased and vanished when resumption became a fact, Jan. 1, 1879. These fluctuations were recorded daily and sometimes hourly on the gold exchange of New York, where the wildest kind of speculation sometimes reigned.

Price movements closely followed these fluctuations and all branches of business and agriculture were demoralized by them. It is impossible to measure, or even approximately to estimate, the extent to which the spirit of speculation was fostered among our people by these conditions or to trace the evils which were engendered by them. Not a few of them are still with us.

Another serious defect of inconvertible notes which are issued by governments is the fact that they entirely lack the capacity to adjust their volume to the changing needs of commerce. The amount of them authorized at any particular time or in the aggregate is determined by the needs of the issuing body for

revenue and not by the need of commerce for a circulating medium, and they are issued in the payment of public expenses, the amount of which do not fluctuate in any fixed relation to the public need for currency. The result is a circulating medium at some times too large in volume and at others too small. When it is too large, financial institutions which hold the deposits of the people are stimulated to make undesirable loans and business men to undertake questionable enterprises, and, when it is too small, legitimate and necessary industry and commerce are checked and handicapped, to the great loss particularly of those producers who at such times are obliged to market their products.

Some people apparently think that this difficulty could be avoided if the public officials charged with the issue of such notes should also be placed under obligation to issue just the quantity needed and to withdraw any excess not needed. Such an obligation, however, would impose an impossible task. No public official, however wise and patriotic, could determine the volume of circulating medium needed by the public, and, if he could, his

power to put notes into circulation and to withdraw them is absolutely limited to the expenditures and income of the government which, as noted above, do not fluctuate in accordance with the needs of the public for money. The only agency which can possibly issue an elastic currency is the one which makes loans directly to business men and receives their surplus funds on deposit, since such loans accurately represent the needs of the public for money and accumulations of cash in depositories represent surplus funds not needed in business. No principle of monetary science is better established both by reason and experience than that no form of government issues can supply a community with an elastic, and, therefore, with a desirable circulating medium.

**5. Coin certificates.** — Widely used forms of currency, especially in this country, are certificates representing coin kept in public depositories. In recent years there have at times been as much as a billion and a half dollars' worth of such notes in circulation in the United States. They are called silver and gold certificates and corresponding amounts of silver

and gold coin are on deposit in the vaults of the Federal Government, held exclusively for their redemption. The silver certificates are redeemable on demand in silver dollars and the gold certificates in gold coin.

These notes take the place in the circulating medium of the coin they represent, and thus save much wear and tear. They are also more convenient than the coin, cheaper to store, and in large denominations save the time which would be required for counting the coins and the expense and danger of their transportation.

They are also a means of greatly increasing the metallic basis of the currency. As we have seen, in the form of coin gold can only circulate conveniently in denominations ranging from about two to ten or possibly twenty dollars, and silver in denominations ranging from about ten cents to one dollar. Through certificate representatives, however, either of these metals could supply the entire hand-to-hand circulating medium except that portion of it which must expand and contract to meet the fluctuating needs of commerce, since coin certificates can be issued in all denominations and can meet the need for hand-to-hand money

for all purposes except those for which coin is more convenient than paper currency in any form and those for which, as we shall show later, bank notes issued against commercial credits are alone fitted.

While gold and silver certificates are equally available and equally convenient for the purposes indicated, in a gold standard country silver certificates are undesirable and in a silver standard country gold certificates, for the reason that the wide use of any metal other than the standard either imposes a heavy and expensive task of redemption on the government or involves all the disadvantages of bimetallism.

The substitution of silver certificates for silver dollars in the circulating medium of the United States, for example, does not relieve the government of the obligation of maintaining a parity between the gold and silver coins by means of direct or indirect redemption of the latter in the former. In order to render such redemption practicable and certain, a gold reserve should be maintained in addition to the reserve of silver dollars, and its amount ought to equal at least the difference between the bullion and the face value of the silver dollars.

In case for any reason redemption should become active it might have to be much larger.

Entirely apart from the possible expense involved, the task of maintaining such a gold reserve should not be imposed upon the government because it is quite unnecessary and because it may become very difficult and conceivably impossible to perform. It is unnecessary because gold certificates can perform the services in question just as well and do not impose such a task, the deposit of gold for the redemption of such certificates being required of the parties who demand them. It might be difficult to perform such a task if the gold market should become tight, and conceivably the market might be under such control as to render it impossible for the government to get the gold at the time it was needed by the means at its disposal, namely, purchase on the open market or the sale of bonds.

The fact that several hundreds of millions of dollars of silver certificates have been successfully circulated in the United States for a number of years without the maintenance of a gold reserve for the redemption of silver dollars, does not demonstrate the desirability

of such notes nor disprove the arguments just advanced. All the dangers indicated are present in the existing situation. Furthermore, if, in their place, we had gold certificates, the gold element in our currency would be much larger than it is at present and in consequence the basis for our entire financial structure much broader and stronger.

**6. Convertible government bonds.** — Since Jan. 1, 1879, the notes of the Federal Government convertible on demand into gold coin have been an element of the medium of exchange of the United States. Similar notes are in circulation in Canada, and occasional use of them has been made in other countries.

In favor of such notes it has been urged that they relieve the government from a considerable interest charge since, being only partially covered by a gold reserve, they constitute a loan without interest, and that, with government back of them, no question concerning their convertibility can or will arise, because such backing inspires perfect confidence. While essentially true, these arguments do not warrant any nation in maintaining such notes in

circulation, since there are disadvantages connected with them which more than counterbalance these advantages.

Among these disadvantages is the fact that they take the place in the circulating medium of an equivalent amount of gold or gold certificates, and impose upon the government a task which it is ill-fitted to perform. Being issued by government, their volume does not and cannot change to meet the changing needs of commerce, and they circulate as money only within the jurisdiction of the government that issues them.

As a simple matter of fact, the volume of these notes in the United States has not changed a dollar since they came into existence in 1879, and the amount of them that even temporarily goes beyond our borders is so small as to be practically negligible. They, therefore, constitute a permanent, fixed element and, since only a definite amount of currency is at any given time needed to transact the business of the country, they prevent from coming into circulation, or crowd out, such other elements as are capable of other uses or of use elsewhere. In this country that element is gold, since it

may be used in the payment of foreign balances and melted for use in the arts.

As a permanent element of our circulating medium, however, gold is superior to such notes in the three following particulars:

Firstly, it has a much wider sphere of usefulness. In the form of gold certificates it can perform every service such notes are capable of performing, and in addition be used in the payment of foreign balances or circulated directly from hand to hand in foreign countries, and unlike them it will be taken both at home and abroad in times of crises or depression, as well as when the machinery of commerce is running smoothly.

Secondly, it lends support to every other element of the medium of exchange. Being the standard of value, it is the redemption material of all other elements of the currency and the larger the quantity of it in circulation, therefore, the more certain will it be that all demands for redemption will be met, and the more stable will our entire credit system become.

Thirdly, since a surplus may be melted for use in the arts, inflation of the gold currency

is impossible. On the other hand the more government notes there are in circulation, the greater the proportion of the redemption work to the amount of the redemption material, and inflation is always a possibility.

The circulation of notes of this kind imposes upon the government the task of their redemption, and for the performance of such a task no public treasury is fitted. The gold for this purpose must either be accumulated in advance, in the form of a reserve, or obtained from ordinary revenue receipts, or borrowed. Neither of these methods, nor all of them combined, render redemption certain under all circumstances. The accumulation of a reserve in advance insures the redemption of only a portion of the notes, unless it is equal in amount to the outstanding issue, in which case the notes cease to belong to the class under consideration and become coin certificates. The attempt to accumulate a reserve from current receipts is a very hazardous venture, since it depends not only upon an excess of receipts over expenditures, but on the presence in the receipts of a sufficient amount of gold. The best and only feasible reliance obviously is bor-

rowing, but that may be difficult and conceivably impossible, and it is certain to be expensive since the need for it as a means of maintaining gold payments is certain to influence adversely the credit of the government and since, on account of the necessity in the case, the government must always be at a disadvantage in the process of bargaining.

The case regarding these notes seems to reduce itself, therefore, to the balancing of the advantage of a slight saving of interest against the disadvantages of a reduction in the volume of the gold element in our currency, with the resulting weakening of our entire credit system and of the placing of the credit of the government in jeopardy with its accompanying financial loss and humiliation.

# CHAPTER IV

## Commercial Banking and the Medium of Exchange

THE greater part of the medium of exchange of modern nations is supplied by commercial banks through the conduct of checking accounts and the issue of notes. These institutions also serve as distributing agents for the other elements of the medium of exchange.

**1. Checking accounts and bank notes.** — Checking accounts are ordinary book accounts of banks with customers on which are credited deposits of cash, the proceeds of the collection of checks and drafts drawn on other similar institutions, transfers from the balances of other customers, and the proceeds of the discount or purchase of notes and bills maturing at a future date. To these accounts are debited cash payments made to customers, transfers to the credit of other accounts made on their behalf, and checks sold them and drawn against the banks' credit with their correspondents.

The customer manipulates his balance at the bank by means of checks — that is, orders on the bank, usually partly printed and partly written, to pay designated amounts to the order of persons indicated or to bearer — whence the name checking account.

How such accounts serve as a medium of exchange may be shown by an illustration. A grain buyer purchases wheat from farmers and sells it to millers. He finances the deal by drawing bills of exchange on the millers for the amounts due him at the end of the credit period agreed upon, say thirty or sixty days, and exchanges these bills at a bank for a checking account against which he draws checks in payment of the farmers. These checks are exchanged at the bank by the farmers for checking accounts in their favor. The millers grind the wheat into flour, bran, middlings, etc., and sell a part of those products to the farmers, receiving in pay checks against the farmers' accounts at the bank, which checks are credited in turn on the bank's books to the accounts of the millers. When the bills of exchange drawn by the grain dealers, accepted by the millers, and discounted by the banks, ma-

ture, these credit balances of the millers are annihilated in whole or in part by checks drawn against them in favor of the banks and in settlement of the matured bills.

This process of drawing, discounting, and paying bills of exchange and conducting checking accounts, which is simply a bookkeeping process, has served as a means of exchanging the farmers' wheat for flour, bran, middlings, etc. In other words, these checking accounts have served as a medium of exchange.

The banks in the above illustration could have executed the exchange of the farmers' wheat for the products of the mills through the issue of notes quite as well as through the conduct of checking accounts. By notes are meant promises of the banks to pay to bearer on demand sums specified in round numbers of such denominations as render the notes suitable for hand-to-hand circulation as money. In this case, in exchange for the bills of exchange drawn on the millers, the banks would have given the grain dealers notes instead of checking accounts, and these notes would have been transferred to the millers by the farmers in exchange for the flour, bran and middlings, and

by these returned to the banks in payment of the matured bills of exchange.

**2. Bank currency and the credit system.** The fact that the greater part of the exchanges of modern nations is conducted by means of commercial banks through checking accounts and bank notes, is explained by the wide extension of the so-called credit system in modern commerce. By this is meant buying and selling on promises to pay instead of for cash, a practice which characterizes a large proportion of present-day commercial transactions. Such a practice is the natural accompaniment of the wider and wider separation of producers and consumers resulting from the extension of markets from purely local to national and even world-wide boundaries, and the subdivision and lengthening of the processes of production.

On account of this separation of producers and consumers and the lengthening of the period between the purchase of raw material and labor and their transformation into goods capable of satisfying human wants, modern exchanges require considerable periods of time.

That is, one party must part with his goods some time before he receives the stipulated return. For example, the producer exchanges completed goods for raw materials or partially manufactured goods and labor, but time for the process of production must intervene. The merchant exchanges goods against goods without the intervention of a productive process, to be sure, but only after the lapse of the time required for transportation, handling, storage, classifying and redistribution. The time element must be financed.

Every exchange in which a period of time elapses between the one transfer and the other involves credit, and it is because such exchanges are a necessity in modern commerce that the credit system is so widely extended and so fundamental. The typical merchant and producer of the present day both receives credit and grants it, and is, therefore, constantly confronted with the problem of meeting the obligations assumed, on the one hand; by means of his rights against other persons, on the other.

It is at this point that the commercial bank comes to his assistance by exchanging checking accounts or notes or both for the credit in-

struments which record his rights against other people. These banks are able to render this service because when a large proportion or all the producers and merchants become their customers, most of the transactions between them can be executed by mere transfers of debits and credits on their books or by the issue and cancellation of notes.

**3. The advantages of bank currency.**— Bank currency, as checking accounts and bank notes may be called, are superior in many respects to coin or government notes. For large payments they are more convenient and economical. The use of a check in such cases saves both time and expense. For payments at a distance, in which the use of the mails or express service is necessary, they are safer as well as more convenient and economical. In case of loss through accident a check or draft can be easily replaced, and in case of robbery payment can be stopped, while the shipment of cash in any form under these circumstances would render loss inevitable.

In the form of commercial and traveler's letters of credit the checking account has be-

come the safest, most convenient, and most economical medium for a large and increasing number and variety of intermunicipal and international transactions, and its capacity for adaptation to the changing needs of commerce is practically unlimited.

The bank note is a form of currency which can compete successfully with any form of government note or with coins of all except small denominations. Barring prohibitive legal regulations, they can be issued in precisely the same denominations as government notes and coins and they can be made equally as safe and equally as acceptable.

In elasticity bank currency, in the form of both checking accounts and notes, is superior to all other forms of currency. By elasticity is meant capacity automatically to adapt its volume to the changing needs of commerce. In this respect bank currency is capable of attaining perfection, and that cannot be said of any other form of currency. Since it may be, and normally is, issued in exchange for credit instruments which record the current movements of commerce, it can, and normally does, increase in exact proportion to the need for it;

and since notes return to the place of issue and credit balances are wiped out by the completion of the commercial processes which brought the credit instruments into existence, and at the time of the maturity of such instruments, it will, and normally does, decrease in the exact proportion that the need for them decreases, that is, in proportion as the volume of credit instruments paid exceeds the volume of new ones discounted.

No other form of currency possesses this quality of elasticity in the same degree of perfection. Government notes are completely lacking in this particular. They are either stationary in volume, like our greenbacks at the present time, or they increase and decrease in response to other influences than the needs of commerce, to such influences, for example, as the relative volume of the revenues and expenditures of the government. Coin and coin certificates fluctuate in volume in accordance with the output of gold and silver mines and the relative volume of the imports and exports of the precious metals. This latter influence may have some connection with the needs of commerce for currency, but the former is in no

way connected with these needs, and the fluctuations in the volume of the world's gold and silver currency as a whole is entirely independent of the needs of commerce for a medium of exchange.

The superiority of bank currency in respect to elasticity, combined with its several other advantages, renders it an essential element of a perfect currency system. The only other essentials are subsidiary coins, which alone can adequately meet the need for small change, and coins made of the standard of value, or coin certificates fully covered by coins made of the standard of value, which alone can supply the need for redemption material. All needs not supplied by the two last mentioned essentials can be better met by bank currency than by any other form, since it possesses all their merits and lacks their demerits, and it is the only element which can supply the need for elasticity.

**4. Commercial banks as reservoirs and distributing centers for money.** — In addition to supplying the greater part of the medium of exchange of modern nations, commercial

banks serve as reservoirs and distributing centers for the money of the world. Most producers and merchants, and a large portion of the people who are neither, are their customers, at least to the extent of using them as places of safekeeping for their funds and as agents in the making of payments. They so use them partly in the interests of economy and partly from necessity. The business of commercial banks requires that they be equipped with strong safes and all other means of protecting valuables. They are, therefore, able to supply the service of the safekeeping of money at the minimum of cost. Since, in addition, the checking account is the best means of making payments at a distance and a large proportion of those made at home, people find it most convenient, economical, and safe to depend upon commercial banks for all their currency needs.

In their dual capacity as creators of the greater part of the medium of exchange of modern nations and as reservoirs and distributors of the remainder, commercial banks, therefore, have become essential parts of the machinery of modern commerce. At the pres-

ent time money and commercial banking cannot be separated. They are necessary parts of the same whole.

NOTE.— In the book on Banking in the National Social Science Series, Professor Scott discusses the questions raised in this chapter. — EDITOR.

## CHAPTER V

### The Value of Gold and Prices

IN the first chapter of this book, prices were defined as the ratios in which goods exchange for the standard of value. This means that in gold standard countries prices are the ratios in which goods exchange for gold. These ratios obviously depend upon the relative valuations placed upon goods and gold in the markets in which such exchanges take place. These valuations are expressed in terms of the familiar law of demand and supply. Back of demand are the uses to which goods are and can be put, and the importance of those uses to the well-being of human beings, and back of supply is production.

**1. The uses of gold.** — Gold is used in the arts and for monetary purposes. In the arts it is used for a variety of purposes, among which the manufacture of jewelry, plate, eye glasses, objects of art, and ecclesiastical imple-

ments, the ornamentation of buildings and articles of various kinds, and dentistry, probably are the most important. The amount consumed in these various uses varies from time to time and depends somewhat upon the relative value of gold and other substances which may be substituted for it, and upon the magnitude of the world's wealth. It probably increases rapidly in times of prosperity, when incomes are increasing, and decreases greatly in hard times. Since the magnitude of the wealth of the world is steadily increasing, in spite of the cycles of good and hard times through which all nations are constantly passing, it is safe to say that there is a constantly increasing demand for the use of gold in the arts and that this demand is an important element in its value.

For monetary purposes gold is used as a medium of exchange and as material for redemption. The practices of different nations in the use of gold as a medium of exchange vary considerably. In Europe it is widely used in the form of coin, partly from habit and partly as a result of the policy in some places pursued of providing no other forms of cur-

rency of the denominations in which gold coins of convenient size can be minted. In England, for example, no bank notes in denominations below five pounds sterling (twenty-five dollars), are issued, and no government notes are provided. On the continent no fixed policy has been pursued regarding the issue of bank notes of low denominations, and the different nations from time to time have changed their policies regarding the issue of government notes. Wherever not prevented by inconvertible notes, however, gold coin is widely used.

In the United States gold coin is not used generally, government and bank notes of denominations five dollars and above being provided. A decided preference for notes over coin for use in denominations of one dollar and above has also been so often manifested here that it may be regarded as a national characteristic. In the form of certificates, however, the circulation of gold is here increasing, and, if gold certificates in all denominations from one dollar up were issued and other forms of currency of low denominations, such as silver certificates and United States notes, were removed from circulation, an enormous and con-

stantly increasing amount of gold would be absorbed into our circulating medium.

As material for the redemption of other elements of the medium of exchange in times of loss of confidence, and as a means of inspiring confidence in its redeemability at all times, reserves of gold are kept by nearly all modern nations. Since the pressure for redemption falls chiefly upon banks, these reserves are mostly kept in bank vaults. On account of our independent treasury system and the maintenance in circulation of the United States notes, in the United States large amounts are kept in government vaults for this purpose.

There is no rule or principle in accordance with which the amount of gold used for monetary purposes is regulated. The volume of trade and other transactions simultaneously carried on and calling for the use of a medium of exchange determines the total volume of the medium required, but no fixed or ascertainable proportion of this must necessarily take the form of gold. So long as conditions, practices, public policies, etc., remain the same, a certain, but previously unascertainable, portion will take this form, but all these conditions,

practices and policies are subject to change, and from time to time do change.

The amount held as reserves to meet unforeseeable demands for redemption and as support for the credit system is also variable. Even where, as in the United States, minimum bank reserves are fixed by law, the amount of gold that must be held is not prescribed. The only actually prescribed gold reserve fixed by the laws of the United States is the $150,000,000 required since 1900 to be held by the Treasury as a redemption fund for outstanding United States notes. The state of public confidence is important in the determination of these reserves. When times are good, business is prosperous, and people are in a hopeful state of mind regarding the future, they are at the minimum, and, under opposite conditions, at the maximum. The actual amount that will be kept in any given condition of public confidence is chiefly determined by the judgment of bankers; under given conditions a conservative banker will keep larger reserves than will a speculative one; but, in the absence of a legal requirement, the judgment of each one regarding what safety demands will determine his action.

**2. Production and durability of gold.**— In the production of gold, like that of other mineral substances, the amount which nature has provided and the form and places in which she has stored her supplies is a primary factor. Another is the knowledge which men have of the existence and location of these supplies and of the means which must be employed in order to obtain them and fit them for human uses. In obtaining this knowledge science plays an important and increasing role, but chance also has a part, though probably a decreasing one.

As a result of the operation of these and other influences the amount of gold produced has varied greatly from time to time. From the discovery of America until the end of the first quarter of the seventeenth century there was a slow but fairly steady increase. From then until the end of the seventeenth century there was a gradual decrease. During the eighteenth century the amount produced increased, quite rapidly during the last twenty years. There was a heavy decrease during the first quarter of the nineteenth century, which was followed in succession by sixty years or more of rapid increase, a short period of de-

crease, and the period of enormous increase in which we are now living. How long this period will last it is impossible to determine. The reports of scientific surveys, and new methods of production recently discovered which have greatly decreased the costs of the process and rendered profitable the use of ores of a much lower grade than was previously possible, indicate that it will continue far into the future.

The durability of gold also affects its supply, since it has preserved and rendered available for present-day uses a large part of all that has been produced in ages past and insures continuous accumulation. The mass of gold at present in existence is enormous and its form is such that large portions of it could be thrown upon the markets in case of need. In this latter particular it is unlike most other substances. For example, the amount of iron produced in the past and now in existence is very large, but its form is such that only a small amount of it could be made available for present-day uses. Most of it is in the frame-work of buildings, ships, cars, and other structures, and in machinery, bridges, tunnels, etc., etc., the destruction of which would be a calamity,

while the melting down of quantities of gold plate, jewelry, and coin would not seriously interfere with our lives or occasion much loss.

3. **The value of gold.** — Since the amount of new gold produced and of old gold thrown upon the markets does not correspond exactly with the fluctuations in the wants to the satisfaction of which it is destined to be applied, fluctuations in its value are inevitable and are constantly taking place. Precisely what these fluctuations are it is impossible accurately to determine. Price quotations into the determination of which they enter do not reveal them, because they reflect changes in the relation between the demand and the supply of the commodities whose prices are quoted, as well as in that between the demand and the supply of gold. Approximate judgments concerning them can only be obtained from statistics of production and estimates of the requirements of the different classes of consumers. While such judgments regarding the direction of the changes may be fairly accurate, regarding their magnitude they can only remotely approximate accuracy.

Fluctuations in the relation between the demand and the supply of gold must be distinguished from fluctuations in its purchasing power, such as are revealed by comparisons of the averages of the price quotations of a number of commodities. Since the word value is often defined as the ratio of exchange between commodities, such comparisons are commonly used as a means of measuring changes in the value of gold. They do furnish a measure of its exchange value, but not of that form of value which is determined by fluctuations in the relation between its demand and its supply Both forms of value must be considered, but nothing but confusion and false conclusions can follow from a failure carefully to distinguish them. Fluctuations in the exchange value of gold are nothing more nor less than fluctuations in prices. Fluctuations in the relation between the demand and the supply of gold are one of the causes of price changes; but, since they may be offset in whole or in part, or be more than offset, or be magnified by fluctuations in the relation between the demand and the supply of commodities, they may take place while prices are stationary or the change in

prices may be in the direction opposite to that in which the change in the value of gold was pushing them, or the amount of change may be much greater or much less than the change in the value of gold warrants.

As shown in the first chapter of this book, fluctuations in the relation between the demand and the supply of gold detract greatly from its utility as a standard of value. They render price quotations defective as a guide for merchants, manufacturers, and farmers, and they seriously disturb the relations between debtors and creditors. Remedies for such fluctuations have, therefore, naturally attracted attention, especially at times when the evidence of their existence was especially convincing. The most important of these proposed remedies are bimetallism and the so-called multiple standard.

**4. Bimetallism.** — The remedy known as bimetallism consists in the free and unlimited coinage of certain or all silver coins, and their endowment with the quality of unlimited legal tender. This amounts to giving such coins a status identical with that of gold coins. How,

in the opinion of its advocates, such a regulation would tend to remedy the evils caused by fluctuations in the value of gold is indicated by the following illustration.

Suppose our present silver dollar, which weighs sixteen times as much as would a gold dollar, if one were minted, were freely coined for whoever might desire to bring to the mints silver bullion of the proper standard. Since the silver dollar now has unlimited legal tender power, no change in our laws in this particular would be needed. Suppose, further, that on account of a rise in the value of gold the relative value of the two metals on the markets of the world are thereby changed to thirty to one instead of sixteen to one, or to any ratio greater than sixteen to one. Under these conditions gold would be worth more as bullion than as coin, and the opposite would be true of silver. Gold coin would, therefore, be melted down and sold as bullion and silver bullion would be taken to the mints and transformed into coin. This would amount to a great decrease in the use of gold for monetary purposes and a great increase in the supply of gold on the bullion market. This decrease in its demand, combined

with the increase in its supply, would cause its value to fall.

If, under the conditions assumed, gold were to decrease in value instead of increase, its supply on the bullion market would be decreased by withdrawals for mintage, which would then be the most profitable use to which it could be put; its use as money would increase, since silver coins would be withdrawn for transformation into bullion and sold on the bullion market, and the value of gold would rise.

Thus, so the argument runs, under a bimetallic system any tendency of gold either to rise or to fall in value would be automatically checked. It is not claimed that this compensatory action of the double standard — as this interchange of silver coin for gold or of gold coin for silver, whenever the bullion and the mint ratios between the two metals change, is called — would render impossible any change in the value of gold. It is claimed only that such action would operate simply to the extent of preventing any change in the relative values of gold and silver. Under the conditions assumed in our first illustration, the transformation of gold coin into bullion for sale on the market and

the withdrawal of silver bullion from the market for coinage would continue until the bullion ratio were restored to the mint ratio, sixteen to one. Since the adjustment of the bullion to the market ratio is brought about by the rise in the value of silver, as well as by the fall in the value of gold, it is, of course, possible that it might be reached before a complete restoration of gold to its former value had been effected. In this case bimetallism would not be a complete remedy for the change in the value of the standard, but it would be at least a partial remedy.

The chief weakness of this argument is the assumption involved of the unlimited interchangeability of gold and silver coin for monetary purposes. That there is no such unlimited interchangeability has been shown in Chapter III. Gold is better fitted than silver for coins of large denominations and silver is better fitted than gold for coins of small denominations. In fact, coins of neither metal can take the place of the other. In the form of certificates they are interchangeable, but certificates in small denominations are inferior to coin. As redemption material the two metals are not inter-

changeable, on account of the difference in their transportation and storage costs. To the extent that they are not interchangeable the compensatory action of the bimetallic system would not take place. On the contrary, the probable result of bimetallism would be a frequent change of the standard of value from one metal to the other. Since bimetallism endows both metals with unlimited legal tender power, debtors would always choose the cheaper of the two as the basis of payment, and prices would have to be quoted in that metal. Instead of ridding us of the evils of a fluctuating standard, therefore, bimetallism would substitute one kind of fluctuation for another, namely, that involved in changing from a dearer to a cheaper standard for that involved in changes in the value of gold.

In a choice between two evils the lesser should always be taken; but in this case a decision is not easy. Under bimetallism, changes in prices due to changes in the value of the standard would be more frequent, but usually less in magnitude, than under monometallism. They would take place with every variation between the bullion and the mint ratios of the

two metals, and such variations would probably follow every change in the value of either metal. Since there would probably be some compensatory action, neither metal would change so much in value as it would if it were entirely disconnected from the other in its market relations. It is questionable, however, whether frequent relatively small changes in the value of the standard are to be preferred to less frequent but greater changes. The former are probably the more disturbing, since the latter can, to a degree at least, be discounted or otherwise guarded against.

**5. The multiple standard.** — The multiple standard is proposed as a remedy for alleged evils of fluctuating prices rather than for the evils of the fluctuating value of gold, which, as we have seen, may or may not result in fluctuating prices. It must be considered, in this connection, however, because its advocates often fail to recognize the distinction between the two classes of phenomena, with the result that it is often supposed to be a remedy for the latter.

By the multiple, or tabular, standard, as it is sometimes called, is meant a standard consist-

ing of a number of commodities instead of one. It might be operated in the following manner: A list of commodities, say, 100, would be selected by Congress as the basis of operations; once a week or once a month accurate quotations of the prices at which specified amounts of each of these commodities had been sold would be collected by a government commission or bureau and averaged, and the differences between such averages, taken at the different periods, calculated and published. Credit instruments, such as promissory notes, bills of exchange, bonds, mortgages, etc., would indicate in terms of dollars the amount received by the debtor and would stipulate that the amount to be paid by him at the date of the maturity of the instrument or at any specified time should be proportionately as much more or as much less than the amount received as the average prices of the list, constituting the multiple standard, at the date of maturity should be greater or less than the average at the date the instrument was drawn. Suppose, for example, the amount received by the debtor is $1,000, and that the note which records his obligation falls due in sixty days. Suppose, further, that

at the expiration of sixty days the average prices of the list of commodities constituting the standard are 10 per cent higher than they were at the time the note was made. The debtor would have to pay $1,100 instead of $1,000. If the comparison of these averages at the two dates in question indicated a fall of 10 per cent, he would have to pay $900 instead of $1,000.

Another method of applying the multiple standard has recently been suggested which would greatly increase the scope of its operations. Professor Irving Fisher of Yale University proposes that the weight of the gold dollar be changed to correspond with changes in the average prices of the commodities constituting the multiple standard. Thus, if the index number representing this average at the next date of making calculations should be 10 per cent greater than the one representing present conditions, Professor Fisher would have the weight of the gold dollar increased 10 per cent, and, under the opposite conditions, he would have it decreased 10 per cent. With this plan in operation, not only would the relations between debtors and creditors, as indicated in

credit instruments calling for deferred payments, be affected, but also prices. In fact, Professor Fisher makes this recommendation because he believes that, so far as possible, changes in prices should be prevented, and this plan would accomplish this end to the extent of preventing anything more than small temporary fluctuations of the average of the prices of the commodities selected as the standard.

In view of the distinction drawn in section three of this chapter between the value of gold and its purchasing power, no argument is here needed to show that the multiple standard in whatever form it may be operated is no remedy for the evils caused by fluctuations in the value of gold. The changes in the weight of the gold dollar which Professor Fisher proposes would directly affect the value of gold only to the extent that the change in the weight of the coins used would increase or decrease the amount of gold used in their manufacture, and neither the direction nor the amount of this change would necessarily correspond with the direction and the amount of the change in the value of gold. Suppose, for example, that the increase in prices which resulted in the 10

per cent increase in the index number and the corresponding increase in the weight of the gold dollar and a possible and probable increase in the value of gold, had been entirely caused by changes in the relation between the demand and the supply of the commodities constituting the multiple standard. In this case Professor Fisher's plan might result in an increase in the value of gold under conditions under which otherwise it would have remained stable. Conditions might equally easily arise in which his plan would aggravate a fluctuation in the value of gold due to other causes.

Professor Fisher's plan is open to the further objection that it renders price fluctuations completely useless as a barometer for the business man. Changes in the relation between the demand and the supply of the commodity or the commodities he is producing are constantly taking place and he must be able to recognize and at least approximately to measure these in order properly to regulate output. Price fluctuations are now the chief means to this end; an imperfect means, to be sure, since they are partly due to changes in the value of gold, but, under Professor Fisher's plan, which would

artificially change the price of every commodity whenever the index number representing the multiple standard changes, price quotations would be such a confusing complex that it would be impossible to form any judgment regarding the changes that had been taking place in the relation between the demand and the supply of commodities. Thus, producers would be left entirely in the dark, and the maladjustments between production and consumption from which we now suffer greatly would be aggravated, and speculation would be greatly stimulated.

Those forms of operating the multiple standard which make it applicable only to the modification of contracts calling for deferred payments are free from the objections just urged against Professor Fisher's plan, and might have some merit if their use were left optional to the contracting parties, but they would render no service in the cause now under consideration, namely the prevention of fluctuations in the value of gold. They would in no direct way affect either the demand or the supply of gold.

**6. Means of counteracting fluctuations in the value of gold.** — The only means of counteracting in some degree the fluctuations in the value of gold caused by changes in the relation between its demand and supply, which give promise of efficiency, are substitutions of gold for other elements of the medium of exchange or vice versa, and the adoption of the gold standard in those countries which are now without it.

It is highly probable that the value of gold has fallen considerably during the last decade and that it will continue to fall for some time to come. There is, therefore, justification for the search for means of increasing the demand for this metal. Among such means available in this country at the present time has already been mentioned the substitution of gold in the form of coin and certificates for the silver certificates, silver dollars, and United States notes now in circulation. Such substitution would create a demand for nearly a billion dollars of additional gold for use as hand-to-hand money in this country. If the use of bank notes in denominations below twenty or twenty-five dollars were discontinued, an additional demand

for gold to take the place of the five and ten dollar notes thus retired would be created.

An additional reason for making this substitution was suggested in Chapter III, namely, the strengthening of our entire credit system by increasing the amount of redemption money available. An objection to such a substitution is the fall in the value of silver bullion which would result from throwing five or six hundred millions of this metal on the market, but this objection could be removed by the retention of the bullion by the government for subsequent use in the manufacture of subsidiary coin or the retention of a portion of it for that purpose, and the gradual sale of the remainder in such quantities and at such times that the market would not be seriously affected by it. Other objections of a sentimental character could doubtless be urged, but they are unworthy of serious consideration.

China and South America present a wide field for the extension of the use of gold. The adoption of the gold standard by the former and the introduction of western industrial and commercial methods would in time create a large demand for gold in the medium of ex-

change of that country. In South America, even where the gold standard is normally in use, inconvertible paper in many places prevents its use as a medium of exchange. The introduction of stable financial conditions throughout that continent would greatly increase the demand for gold.

If these and possibly other means of increasing the use of gold which are in themselves commendable and advantageous were employed, it is not impossible that the present tendency of that metal to fall in value might be completely counteracted and danger of a further serious fall in the immediate future averted.

During periods in which the value of gold rises, a means of decreasing the use of it for monetary purposes is available in the extension of the use of bank notes of lower denominations than was formerly permitted. In order to make possible the employment of this means at such times the issue of bank notes in relatively high denominations only, during periods when gold is cheap, is desirable.

## CHAPTER VI

### The Money of the United States

IN order to understand the currency problems which confront the people of the United States at the present time, an account of the history of the most important elements of our medium of exchange is necessary.

**1. Origin of our system of coinage.**— At the time of the adoption of our present constitution the circulating medium of the country consisted of several varieties of foreign coin, of notes issued by the Bank of North America at Philadelphia, the Bank of Massachusetts at Boston, and the Bank of New York State at New York, and of the remnants of note-issues made previously by several of the colonies and by the governmental organization that had conducted the revolutionary war. It was inadequate in quantity, very defective in quality, and extremely inconvenient because of the different units and systems of reckoning

involved. One of the first tasks assumed by the new government was the creation of a coinage system to take the place of this heterogeneous mass. The work fell chiefly to Alexander Hamilton, the first Secretary of the Treasury, who made a report to Congress on the subject in 1791. This was followed in 1792 by a coinage act.

The characteristic features of the coinage system provided by this act were the establishment of the dollar as the unit of value, of the decimal system of reckoning, and of bimetallism. The dollar unit was adopted because the Spanish milled dollar was the most widely circulated coin of the time and the basis of the accounts of the chief merchants and of most, if not all, of the states. It is interesting to note, however, that the weight of the silver dollar authorized — 371¼ grains of pure, or 416 grains of standard metal — was not identical with that of any of the Spanish dollars at the time in use, but was arrived at by a determination of the value of gold bullion and the multiplication by 15 of the number of grains of gold which a dollar of the time would buy, the estimated ratio of the relative values of gold

and silver bullion being 15 to 1. Thus, having discovered that a dollar would buy 24¾ grains of pure gold, 15 times this figure, or 371¼, gave the weight of the silver dollar. The weights of the other silver coins authorized were proportional to this, and that of all the gold coins was calculated on the basis of 24¾ grains of pure gold to the dollar.

The decimal system of reckoning had been recommended by several persons who had given the matter consideration, including Thomas Jefferson and Alexander Hamilton. On the grounds of both simplicity and convenience it was clearly superior to the English system, with its pounds, shillings, and pence of ancient usage, its only real rival.

Bimetallism was recommended by Hamilton and apparently adopted by Congress because of the belief that it would insure a larger supply of coin than would either silver or gold monometallism. The disadvantages of bimetallism were not appreciated at that time and the use of subsidiary coins had not yet become incorporated into the practice of nations. Bimetallism, therefore, appeared to be the only means of securing the circulation of both metals.

**2. The silver period.** — Several circumstances interfered with the operation of the system as planned. The first of these was a change in the relative value of gold and silver which occurred before there had been time for the construction of a mint and the actual manufacture of coins. Beginning with 1794, the market ratio between gold and silver ranged about as follows: 15.37 to 1 in 1794, 15.55 to 1 in 1795, 15.65 to 1 in 1796, 15.41 to 1 in 1797, 15.59 to 1 in 1798, 15.74 to 1 in 1799, 15.68 to 1 in 1800, 15.46 to 1 in 1801, and 15.26 to 1 in 1802. Indeed, it never again fell to as low a point as 15 to 1. The result was that gold could be more profitably used as bullion than as coin.

At least as early as 1810 the disappearance of gold coin from circulation was noted in Congress and elsewhere. Unfortunately the new silver coins did not circulate freely. Pending the construction of a mint and the manufacture of a sufficient quantity of new coin to supply the needs of the country, Congress had authorized the use of several kinds of foreign coins, including the Spanish milled dollars. Since these latter contained more silver than the new

American dollars, and since both the Spanish and the American dollars were accepted at their face value in both the United States and the Spanish West Indies, with which we were at the time carrying on an active trade, the merchants of Boston, New York, Philadelphia, and Baltimore engaged in this trade discovered a source of profit in shipping American dollars to the West Indies and in bringing West Indian dollars home and transforming them into American dollars at the mint.

This traffic, combined with the disappearance of gold coin, would have created a serious currency stringency had not the banks of the period issued notes in all required denominations. The chief result of the shortage of coin, therefore, was to render the maintenance of adequate bank reserves difficult, and thus to weaken the credit system of the period. In 1805 President Jefferson attempted to put a stop to the traffic in silver dollars by ordering the discontinuance of their coinage at the mint, but it was continued by the use of fractional silver coins, a practice which soon drained the country of its small change.

The refusal of Congress to recharter the

United States bank, which was, therefore, forced into liquidation in 1811, and the war with England, 1812-14, aggravated these currency difficulties by forcing most of the state banks into a state of suspension of specie payments. Their notes depreciated greatly in value, specie disappeared from circulation throughout all parts of the country except New England, and prices rose and fluctuated widely. The first remedy applied was the charter of the second United States bank in 1816, upon which was imposed the task of restoring specie payments. This was a slow process, rendered more difficult than it otherwise would have been by the actual scarcity of specie. For this scarcity no remedy was attempted until 1834, when an act was passed which restored gold to circulation.

**3. The gold period.**—The act of 1834 lowered the weight of the gold eagle by decreasing its content of pure metal from 247.5 to 232 grains. This raised the mint ratio between gold and silver from 15 to 1 to 16 to 1, thus slightly overvaluing gold, which on the markets of the world at the time was worth,

weight for weight, about 15.73 times as much as silver. It therefore became profitable to bring gold bullion to the mint for manufacture into coin, but unprofitable to transform silver bullion into coin. The disparity between the new mint and the bullion ratios of the two metals was greatly increased by the discovery and exploitation of rich gold mines in Australia and California in the late forties and succeeding years. The result of these influences was the restoration of gold coin to circulation in fairly large quantities after the output of the new mines reached the market. Small change, however, continued to be scarce, so scarce, in fact, that private tokens were issued by business firms and corporations to fill the gap left by the disappearance of silver coins.

A remedy for this latter condition was supplied by the act of 1853, which authorized the issue of subsidiary half dollars, quarters and dimes. The weight of these new coins was made nearly 7 per cent less than that of coins of the same denominations authorized by the act of 1792, and they were declared to be legal tender for sums of five dollars and below only. The silver dollar was not affected by this act,

but its coinage was unprofitable because the bullion necessary to manufacture it was worth considerably more than a dollar on the markets of the world.

Under the conditions created by the acts of 1834 and 1853 and the new discoveries of gold, this country for the first time enjoyed an adequate circulation of specie of all the necessary denominations. The greater part of the circulating medium even during this period, however, was supplied by the state banks, which increased rapidly in number, especially after the removal of the competition of the second United States bank in 1836. This portion of the currency was defective on account of wide differences in the character of the banks which were issuing notes. There was no uniformity in the laws passed in the various states for the regulation of banks, nor in the practices of the banks themselves. The notes of most banks, therefore, enjoyed a local circulation only and the country lacked a uniform credit medium.

**4. The period of inconvertible notes.**— The war between the states which broke out in 1861 profoundly affected our currency and

banking systems. A financial exigency early developed which forced Congress in 1862 to authorize the issue of legal tender notes in denominations suitable for circulation as money. Within a few months four hundred millions of these notes were forced into circulation, with the result that at one time they depreciated to less than fifty cents on the dollar, specie was forced out of circulation, and prices were raised to the level fixed by the new secondary standard.

In order to create a market for government bonds, the sale of which alone could prevent further issues of these notes, Congress established in 1863 the national banking system, the central feature of which was the exchange of bank notes for government bonds through a special bureau created in the Treasury department for that purpose. In order to give this class of notes right of way, and, if possible, to force state banks into the new system, a tax of 10 per cent on notes issued on any other basis was imposed by Congress by a law passed in 1865.

Under the operation of these laws, for the circulating medium of the period, 1834 to 1862,

consisting chiefly of gold coin, subsidiary silver and state bank notes, one consisting of inconvertible, depreciated government legal tender notes, and national bank notes was substituted. In order to supply the need for small change created by the disappearance of coin, Congress authorized the issue of notes of denominations fifty, twenty-five, and ten cents, called fractional currency.

The defective, even dangerous, character of this currency was recognized by many people in and out of Congress, but to get rid of it proved to be a difficult undertaking. Immediately after the close of the war the Secretary of the Treasury recommended to Congress the resumption of specie payments by the gradual retirement of the legal tender notes. An act passed in 1866 gave him the authority he desired, but limited the quantity of notes he was permitted to retire to ten million dollars during the first six months and to not more than four million dollars per month thereafter. Opposition to the Secretary's policy very soon appeared, however, and in 1868, by act of Congress, he was deprived of the authority to retire more notes.

During the seven years following a continuous battle was fought in Congress between the advocates and the opponents of the resumption of specie payments. To the former a partial victory came in 1875 in the form of an act which required the Secretary of the Treasury to redeem the legal tender notes in gold coin on demand on and after January 1, 1879; gradually to reduce the quantity of such notes to $300,000,000; and authorized him to sell bonds, if necessary, in order to procure the gold needed. Before actual resumption took place under the terms of this act the opposition gained sufficient strength to secure the enactment of a law which put a stop to further reduction in the volume of the notes, and required the immediate reissue of any notes thereafter redeemed. The amount outstanding at that time was $346,681,016.

In 1873, when the prospects for resumption were becoming brighter, a coinage act was passed which, among other things, omitted the silver dollar from the list of coins authorized to be struck at our mints. The reason for this omission was the fact that, silver bullion having been undervalued at our mints for nearly

forty years, these coins had become practically obsolete. Furthermore, they were not needed, sufficient money in the one dollar denomination being supplied by the United States notes. At the time of its passage this act attracted comparatively little attention and excited little opposition in Congress, but in a few years it became the occasion of hot controversy and of much bitterness between opposing political factions. Under the name of "the crime of '73," it figured prominently in the free silver controversy which almost immediately followed.

**5. The free-silver controversy and the Bland and Sherman acts.** — During the sixties, silver mines of unparalleled richness were discovered and opened up in Nevada and other western states, the output from which began seriously to affect the markets about the time of the passage of the act of 1873. The price of silver fell slowly at first, but about 1876 rapidly, with the result that its ratio to gold passed the 16 to 1 mark in 1874, and in 1876 approached 18 to 1. Strong financial interests were affected by this slump in the silver market,

as well as the entire section of the country in which silver mining was, or was likely to become, the dominant industry. To these interests the act of '73 was a serious obstacle. Had it never been passed, the entire product of these mines could have been shipped to the mints and transformed into silver dollars at the rate of 371¼ grains per dollar, each one of which would have possessed the same purchasing power as a gold dollar, whereas under existing conditions 371¼ grains of silver sold for much less than a gold dollar. To them the act of 1873 appeared as a wicked scheme to prevent the realization of the largest profits from their industry. They, therefore, demanded the restoration of the silver dollar to its former status, that is, its free coinage for whosoever might bring to the mints bullion of the proper standard.

In this demand the silver interests were joined by the opponents of the resumption of specie payments. To them the repeal of the act of '73 and the injection of cheap silver into the currency appeared as a means of counteracting the fall in prices which resumption had occasioned. This faction was also strong-

est in the West, where pioneer farmers who had purchased their lands and mortgaged their farms during the period of high prices, were finding it increasingly difficult to meet their interest charges and to pay off their mortgages at the lower prices involved in the return to a specie basis.

The first legislative result of this agitation for the free coinage of silver was the Bland act of 1878, which required the Secretary of the Treasury each month to purchase at the market price not less than two million dollars' worth of silver bullion and not more than four million dollars' worth and to coin the same into silver dollars of the kind authorized previous to the passage of the act of 1873. The Bland act was a compromise between the opposing forces, but under its operations about 25,000,000 silver dollars per year were injected into our currency during the following twelve years.

This act also introduced into our currency the silver certificate in a provision which authorized the deposit of silver dollars with the Treasurer of the United States and the issue therefor of certificates in denominations ten dollars and above, redeemable on demand in such dollars.

Later authority was given for the issue of certificates first in denominations of five dollars, and later still in denominations of one and two dollars.

Like all compromises, the Bland act was unsatisfactory to both parties to the controversy. The advocates of free silver continued their agitation both in and out of Congress, and in 1890 secured a further concession in the form of the Sherman act, which directed the Secretary of the Treasury to purchase each month 4,500,000 ounces of silver and to pay for it in Treasury notes redeemable on demand either in silver dollars or gold coin at the option of the Secretary of the Treasury. However, since the act declared it to be the policy of the United States to maintain a parity between the two metals at the existing legal ratio, the Secretary was practically compelled to redeem these notes in gold so long as the mint ratio remained above 16 to 1.

**6. The crisis of 1893 and the act of 1900.** Besides giving us a very complex currency, the laws which have been described, passed during and since the civil war, imposed upon

the Treasury of the United States a serious obligation without adequately equipping it with the power to meet that obligation. It was required to redeem on demand in gold coin the United States notes and the so-called Sherman notes, and to maintain at a parity with gold the silver dollars and silver certificates issued under authority of the Bland and subsequent acts. To meet this obligation the Secretary of the Treasury had to depend upon such gold as was voluntarily paid into the Treasury by the government's debtors, and was not needed for the payment of expenses, and upon such authority to sell bonds for gold as the resumption act conferred. That act clearly authorized him to sell bonds if necessary for the purpose of securing the gold needed for the resumption of specie payments January 1, 1879, but whether it conferred authority to sell bonds on any subsequent occasion on which gold might be needed for the maintenance of specie payments was doubtful.

The danger involved in this situation was clearly revealed in the period immediately preceding, during, and following the crisis of 1893. During that period heavy shipments of gold had to be made to foreign countries, in

part, doubtless, stimulated by the unprotected condition of the Federal Treasury. The supply of the banks of New York City, upon which the burden of these shipments fell, having become depleted, United States notes at first and subsequently Sherman notes were presented to the New York subtreasury for redemption. By these means the gold reserve, which had been accumulated for this purpose and kept in excess of $100,000,000, was reduced and finally threatened with extinction. The expenditures of the government being at the time in excess of its ordinary receipts, and the proportion of those receipts paid in gold being greatly diminished on account of the saturation of the currency with United States notes, Sherman notes, silver dollars, and silver certificates, all of which were receivable for government dues, it was not possible to replenish the gold reserve from the ordinary revenues.

In spite of doubts regarding the precise authority conferred upon the Secretary of the Treasury by the resumption act, a doubt which Congress refused to remove, bond issues were resorted to, in two instances, however, with temporary results only, since the gold paid for

the bonds was either drawn from the Treasury in advance or subsequently by the presentation of notes for redemption. Extraordinary measures, therefore, had to be resorted to in order to prevent the suspension of gold payments by the government. Through the influence of the President of the United States a syndicate of bankers in New York City was formed who agreed to import gold in exchange for government bonds and to use their influence for the protection of the gold reserve of the Treasury. On account of their powerful foreign connections and their great resources these bankers were able to fulfill this contract, but the experience was a humiliating one for the government.

Soon after the passing of the panic period of this crisis, President Cleveland called a special session of Congress for the purpose of devising a legal remedy. In an able message he analyzed the currency situation, and recommended the repeal of the clause of the Sherman act which required the purchase of 4,500,000 ounces of silver each month. After a long and acrimonious debate his recommendation was incorporated into law, and the further injection of overvalued silver into the currency was

stopped and has not since been renewed. In 1898, however, an act was passed directing the Secretary of the Treasury to coin into silver dollars and put into circulation the bullion which had been purchased in pursuance of the Sherman act.

The repeal of the silver-purchase clause of the Sherman act was not a remedy for the currency ills caused by the legislation of the civil war and subsequent periods. It simply put a stop to further aggravation of these ills. By way of a partial remedy at least, President Cleveland recommended the retirement of the United States and Sherman notes and thereby the freeing of the Treasury from the obligation of maintaining a gold reserve for their redemption.

Opposition to this recommendation came from many sources, including the remnants of the faction that had opposed specie payments, free-silverites, opponents of national banks, and the political enemies of the President. The need for currency reform, however, was so pressing that the demand for it could not be stifled. In 1897 a great convention of business men representing the commercial organizations

of the entire country met in Indianapolis and not only demanded reform, but formulated a bill which was sent to Congress, together with a representative committee to explain it and urge its passage. Various other reform measures were suggested by the American Bankers' Association and many private persons.

The outcome of all this agitation was another compromise measure, the act of 1900, the chief provisions of which may be summarized as follows:

(1) The first section provided that the gold dollar consisting of twenty-five and eight-tenths grains of standard gold should be the standard of value of the United States. This declaration did not change existing conditions. Gold was at the time and since 1834 at least had been the standard of value of the country. However, it probably tended to inspire confidence in the intention of Congress to maintain gold payments and the hope that a new and more enlightened era of currency legislation had dawned.

(2) It provided for the gradual retirement of the Sherman notes by directing the Secretary of the Treasury to cancel and retire such notes as fast as silver dollars should be coined under the provisions of the Sherman act and the act of 1898 and as fast as subsidiary coin should be issued under authority granted in Sec. 8 of the act.

(3) It provided for the accumulation and maintenance of a gold reserve of $150,000,000 to be used exclusively for the redemption on demand of the United States and Sherman notes. In order to prevent in the future any "endless chain" operations such as were experienced in the period succeeding the crisis of 1893, it provided that United States or Sherman notes once redeemed should be retained in the Treasury until they were withdrawn in exchange for gold.

(4) In order partially to remove the danger involved in the circulation of more than half a billion of overvalued silver dollars and silver certificates, it provided that not less than 90 per cent of the silver certificates should be issued in denominations $10 or less, and that United States notes of denominations $10 and less should be retired and cancelled and a corresponding amount of such notes of higher denominations be issued in their place. The hope was that in this way a demand for the constant circulation of all the silver dollars and silver certificates would be created, and the danger to the maintenance of the gold standard which their presence in the past had threatened, would be averted.

(5) Other sections of the act provided for the exchange of the outstanding five, four, and three per cent bonds, for two per cents payable at the pleasure of the government after thirty years, for the organization in small towns of national banks with a minimum capitalization of $25,000, for the

reduction of the tax on national bank notes from one to one-half of one per cent, provided the two per cent bonds authorized by the act should be deposited as security for the notes, and for the increase of the circulation of national banks to the par value of the bonds deposited with the Comptroller of the Currency. These provisions opened the way for a large increase in the number of national banks and for a continuance of the system for another generation at least.

**7. Present-day currency problems.** — Since the passage of the act of 1900, the Sherman notes have been reduced in volume to an insignificant amount, $2,709,000 May 1, 1913, and the volume of national bank notes has been more than trebled. Our need for currency in denominations one, two, and five dollars is apparently sufficient to keep in constant circulation the silver dollars and silver certificates, and the execution of the provisions of the act of 1900 relative to the gold reserve and the redemption and reissue of the United States notes has removed the danger of the forced suspension of gold payments, even though an approximate recurrence of the conditions which followed the crisis of 1893 should be experienced.

The act of 1900, however, did not solve the problem presented by the circulation of the United States notes. It is still possible for them to force an issue of government bonds and to embarrass the Treasury. Why should they be longer retained as an element of our currency? They could be gradually retired by the application of surplus revenues to that end or through the proceeds of a bond issue sufficient to realize an amount of gold equal to the difference between the gold reserve and the amount of the notes outstanding. In either case the immediate expense would not be great. When it is remembered that these notes represent an obligation of the government of the same kind as bonds, their retirement through a bond issue appears as a refunding operation, and the only loss involved is that of the interest on the bonds. As an offset to this should be reckoned the expense of administering the gold reserve and the redemption and maintenance of the notes, the loss in credit which the government is likely from time to time to suffer from the forced issue of bonds for the maintenance of the reserve and the shock to the credit system of the entire country which a resort to Treasury

action for the maintenance of gold payments necessarily inflicts.

An additional reason for the retirement of the United States notes applies with equal force to the retirement of the silver dollars, silver certificates, and the bond-secured national bank notes, and that is the diminution of the volume of gold currency which their circulation involves. The transaction of the business of the country under existing conditions and habits requires a certain amount of hand-to-hand money. To the extent that this need is supplied by United States notes, silver certificates, and bond-secured bank notes, gold to that amount is kept out of circulation, and the removal of these notes would bring a corresponding amount of gold into circulation, provided the issue of gold certificates in the various denominations needed for currency purposes were permitted.

A considerable increase in the volume of gold used in our circulating medium would strengthen our entire credit system by increasing the amount of the ultimate redemption material available and in the possession of the banks and other redemption agents, and by in-

creasing the demand for gold it would tend to counteract the influences which are now forcing down its value and thus raising prices.

Very likely it would not be necessary, and perhaps not desirable, to have the gold element in our currency increased to such an extent as the retirement of the entire volume of bond-secured bank notes would require. To grant this, however, does not furnish an argument in favor of the retention of a portion of these notes, but rather one in favor of the supply of a kind of bank note which will automatically adjust its volume to our needs, however great or small. As was pointed out in Chapter IV, such a kind of note commercial banks are able to furnish if they are permitted to issue notes against commercial paper, such paper fluctuating in volume in exact correspondence with the needs of commerce.

An additional reason for the substitution of commercial-paper-secured for bond-secured notes is the absence of an elastic element in our currency at the present time. Of the four chief elements of our currency, gold, silver, United States notes, and national bank notes, two: silver and United States notes, are practi-

cally stationary in volume, and the other two fluctuate in volume without reference to our needs. The gold element increases in volume when the output of our gold mines increases and when our imports of gold exceed our exports, and decreases under the opposite conditions. Our national bank notes increase in volume when the number of national banks increases and when the price of government bonds falls, and decreases in volume when the price of government bonds rises. Our currency needs, however, do not fluctuate in accordance with or as a result of these circumstances. They fluctuate regularly with the seasons, increasing in the spring and fall and decreasing in midsummer and midwinter. They are also subject to long-period fluctuations, increasing for a series of years during the boom period of a credit cycle and decreasing for a few years after a crisis.

As a result of the lack of correspondence between the fluctuations in the volume of our currency and in that of our currency needs, we regularly suffer from currency stringency in the spring and fall, and from a surfeit of currency at other seasons. During the boom

period of a credit cycle our entire credit system is over-expanded and overstrained, and after a crisis the channels of circulation are choked and clogged. The consequences are a retardation and checking of legitimate and wholesome commercial activities with great loss to the producing classes during the stringency periods, and the stimulation of all branches of speculative, dangerous, and unwholesome activities during the others.

Experience and the results of scientific investigation both indicate that the best currency for our times consists of gold, in the form of coin and certificates, subsidiary silver and low denomination coins of copper and nickel or amalgam, and bank currency in the form of checking accounts and notes issued against the commercial paper which the regular processes of commerce and industry automatically create and retire. For the proper functioning of such a currency a properly constructed and perfectly sound commercial banking system is essential.

# REFERENCES

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The following list indicates the parts of the above-mentioned books which relate to the subjects treated in each chapter of this book:

## CHAPTER I

LAUGHLIN, Ch. III; SCOTT, Chs. I and III; JEVONS, Chs. I and III; KINLEY, Chs. II and V, and JOHNSON, Ch. II.

## CHAPTER II

LAUGHLIN, Chs. XII and XV; KINLEY, Ch. IV; SCOTT, Chs. II and V; JEVONS, Ch. VIII; NICHOLSON, Ch. IV.

### Chapter III

Scott, Ch. V; Walker, Chs. XIV-XVII; Johnson, Chs. XIII and XIV; White, Bk. II, Chs. III and V; Laughlin, pp. 477-490.

### Chapter IV

Scott, Ch. VII; White, Bk. III, Ch. I; Laughlin, Chs. IV and V; Johnson, Ch. III.

### Chapter V

Scott, Chs. IV and XVI; Laughlin, Chs. VII, VIII, and IX; White, Chs. I, IV, V, and VI; Johnson, Chs. II, III, VI, and XIII; Kinley, Ch. VIII.

### Chapter VI

Laughlin, *History of Bimetallism in the United States;* Noyes; Dewey; Scott, Chs. XVI and XVII; White, Bk. II.

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